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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,333	05/04/2006	Wilhelm Rademacher	5000-0167PUS1	5693

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EXAMINER

SCHLENTZ, NATHAN W

ART UNIT	PAPER NUMBER
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1616

NOTIFICATION DATE	DELIVERY MODE
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12/30/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/578,333	Applicant(s) RADEMACHER ET AL.	
	Examiner Nathan W. Schlientz	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 11-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/2/06 and 3/18/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-10, in the reply filed on 24 November 2009 is acknowledged. The traversal is on the ground(s) that there does not appear to be any significant undue burden placed on the Examiner to examine the non-elected Groups II-V which all recites uses of the elected mixture of Group I, or to examine non-elected Group VI which recites a use of an embodiment falling within the scope of claim 1. Further, all of the claims require the mixture of a compound of formula I and an ethylene modulator II which is a shared special technical feature.

This is not found persuasive because the shared technical feature, a mixture of a compound of formula I with an ethylene modulator is known. WO 97/40688 discloses compositions comprising a mixture of strobilurins with a fungicidal triazole and surfactants. Therefore, the mixture of a compound of formula I and an ethylene modulator is known and is therefore not a special technical feature.

Claims 11-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 24 November 2009.

Applicant's election with traverse of pyraclostrobin and prohexadione-Ca is acknowledged. The traversal is on the ground(s) that the scope of formula I is reasonable in that no undue burden is placed on the Examiner to proceed to examine

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the entire scope of the term. It is noted by the examiner that applicants originally stated “inhibitors of the action of ethylene selected from the group consisting of structural analogs of ethylene”, but then recited prohexadione-Ca, which is not a structural analog of ethylene but rather a structural analog of ascorbic acid.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph. In the instant case, compounds according to formula I and ethylene modulators would require an examination and search burden due to their mutually exclusive characteristics. In accordance with Markush practice, and as requested by applicants, if the elected species are found allowable, the examiner will expand the search to include nonelected species.

Claim 7 is withdrawn as being drawn to a nonelected species. The requirement is still deemed proper and is therefore made FINAL.

Status of the Claims

Claims 1-18 are pending in the present application. Claims 7, 11-18 are withdrawn as being drawn to nonelected subject matter. Thus, claims 1-6 and 8-10 are examined herein on the merits in so far as they are drawn to the elected species.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bartlett et al. (Pest Management Science, 2002), Gullino et al. (Crop Protection, 2000), Müller et al. (WO 97/40688), Rademacher et al. (US 5,869,424), Elad (Netherlands Journal of Plant Pathology, 1993), and Grover et al. (Plant Physiology, 1976).

Determination of the scope and content of the prior art

(MPEP 2141.01)

Bartlett et al. teach pyraclostrobin as one of six commercially available strobilurins for agricultural use, which are one of the most important classes of agricultural fungicides (Abstract). Bartlett et al. further state that the strobilurins, such as pyraclostrobin, have been extremely successful because of the benefits that they

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bring and are clearly one of the most valuable classes of single-site fungicide ever discovered by the agrochemical industry (pg. 660, Conclusions). Bartlett et al. also teach that there has been consistently greater yield from strobilurin-based cereal fungicide programmes compared with azole-based programmes in situations where both spray-programmes have delivered similar levels of visible disease control or where there has been seemingly insufficient difference in visible disease control, termed the strobilurin “greening effect” (pg. 656, left column, 2nd paragraph). One reasoning for the “greening effect” has been that strobilurins are found to affect a variety of physiological processes, such as ACC synthase and thereby ethylene biosynthesis (pg. 656, paragraph bridging the two columns). Bartlett et al. further teach that azoles in combination with kresoxim-methyl, a strobilurin, gave similarly good fungal control but significantly better prevention of leaf necrosis (pg. 656, right column).

Gullino et al. teach that in addition to the strobilurin's direct effect on pathogens, these fungicides induce physiological alterations in many crops, particularly cereals. The resulting longer retention of green leaf tissue and significant yield enhancements are very exciting potential benefits of the strobilurins in agriculture. Such bioregulatory effects, leading to retarded senescence and intensified green leaf pigmentation may be due to several factors, including broad control of pathogens and saprophytes and inhibition of ethylene biosynthesis (pg. 5, left column, 4th paragraph).

Müller et al. teach combinations of pyraclostrobin with kresoxim-methyl or epoxiconazole in the presence of a surfactant (Examples 7 and 25).

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

Bartlett et al. and Gullino et al. do not teach combining pyraclostrobin with prohexadione-Ca or Co^{++} ions, as instantly claimed. However, they both teach that the unexpected superior physiological activity is due in part to the inhibition of ethylene biosynthesis. Thus, it would have been *prima facie* obvious to add inhibitors of ethylene biosynthesis. Elad teaches that Co^{++} ions are also ethylene biosynthesis inhibitors (Abstract). Grover et al. teach that Co^{2+} is a powerful inhibitor of ethylene biosynthesis (Abstract). Rademacher et al. teach compositions comprising the combination of ethylene biosynthesis inhibitors and plant growth retardants, such as prohexadione-Ca.

Finding of *prima facie* obviousness

Rational and Motivation (MPEP 2142-43)

Therefore, it would have been *prima facie* obvious for one of ordinary skill in the art at the time of the invention to combine the strobilurin, pyraclostrobin, as reasonably taught by Bartlett et al., with inhibitors of ethylene biosynthesis, such as Co^{++} ions, in order to retard senescence and intensify green leaf pigmentation, as reasonably taught by Elad and Grover et al., as well as combine prohexadione-Ca and azoles to prevent leaf necrosis.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Schlientz whose telephone number is 571-272-9924. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NWS

/John Pak/
Primary Examiner, Art Unit 1616